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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,192	10/27/2003	Peter Tiemann	2000P20254WOUS	3873

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SIEMENS CORPORATION
INTELLECTUAL PROPERTY DEPT.
170 WOOD AVENUE SOUTH
ISELIN, NJ 08830

EXAMINER

KIM, TAE JUN

ART UNIT	PAPER NUMBER
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.3746

DATE MAILED: 11/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/694,192	TIEMANN, PETER	
	Examiner	Art Unit	
	Ted Kim	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-45 is/are pending in the application.
- 4a) Of the above claim(s) 38-40 and 42-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-37, 41 and 45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 896193 in view of either Craig et al (4,414,816) or Vogt (4,236,378). EP '193 teaches a combustion chamber comprising: an outer wall structure 32 surrounding an internal area; a cooling air inlet orifice 42 arranged on the outer wall structure for cooling air near a hot gas outlet orifice 16, the cooling air inlet orifice opening into a cooling air channel 40; a burner 14 projecting into the internal area; a housing 21 extending from the burner to the hot gas outlet orifice; an inner wall offset from the outer wall structure 32, the inner wall formed by a surface of the housing and cooled by convection by an air stream flowing between the outer wall structure and the inner wall, the air stream being conducted in a closed cooling air channel; and an outlet opening for the cooling air from the cooling air channel via which the cooling air is conducted to the burner for combustion purposes 50, whereby between the cooling air inlet orifice and the outlet opening the majority of the surface of the housing is cooled by convection by the cooling air stream; wherein the housing has stiffening ribs 48 on its surface; in the area of the burner the housing has a

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device for insertion of the burner. EP '193 do not teach a stiffening rib being arranged on the surface of the housing and oriented in the axial direction, the stiffening rib reducing stress in the housing. Craig et al teach a stiffening rib 40 on the housing, positioned within an outer wall structure, which serve to cool the housing 36 and thus reduce stress. Vogt teaches stiffening a stiffening rib 77 on the housing, positioned within an outer wall structure, which serves to cool the housing 60 and reduce the stress. EP '193 teaches various aspects of the prior art but does not specifically teach the housing is sheet metal having a wall thickness of between 3 and 10 mm. However, using sheet metal with this thickness is well known in the combustor art and it would have been obvious to employ as an obvious matter of using the conventional materials in the art and having the conventional ranges in the art.

3. Claims 25-30, 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 896193, by itself or in the combination applied above, in view of either Maclin (4,912,922) or Halila (5,363,643). EP '193 teaches various aspects of the claimed invention, including the cooler air inlet orifice arranged on the outer wall structure such that where the cooling air enters the cooling air channel, a section of the housing is cooled by impingement cooling, but do not teach the interlocking joint on the outer wall structure. Maclin is cited to show to show that it is old and well known in the art to employ an interlocking wall (see bolts) at the outlet end of the combustor with the outer wall. Halila is also cited to show that it is old and well known in the art to use an interlocking joint on the outer wall structure (see the downstream end of 44 which

interlocks with 46. It would have been obvious to one of ordinary skill in the art to employ an interlocking joint on the outer wall structure, in order to provide adequate structural support for the combustor housing.

4. Claims 25-30, 34 rejected under 35 U.S.C. 103(a) as being unpatentable over Eriksson et al (4,362,500) in view of either Craig et al (4,414,816) or Vogt (4,236,378). Eriksson et al teach a combustion chamber comprising: an outer wall structure 6 surrounding an internal area; a cooling air inlet orifice in 12 arranged on the outer wall structure for cooling air near a hot gas outlet orifice, the cooling air inlet orifice opening into a cooling air channel 7; a burner 11 projecting into the internal area; a housing 5 extending from the burner to the hot gas outlet orifice; an inner wall offset from the outer wall structure 6, the inner wall formed by a surface of the housing and cooled by convection by an air stream flowing between the outer wall structure and the inner wall, the air stream being conducted in a closed cooling air channel 7; and an outlet opening 10 for the cooling air from the cooling air channel via which the cooling air is conducted to the burner for combustion purposes, whereby between the cooling air inlet orifice and the outlet opening the majority of the surface of the housing is cooled by convection by the cooling air stream; in the area of the burner the housing has a device for insertion of the burner. The housing and wall has bolts/suspension device 16 for mounting the two and which inherently permit at least some movement in both the axial and radial direction. Erriksson et al do not teach a stiffening rib being arranged on the surface of the housing and oriented in the axial direction, the stiffening rib reducing stress in the housing. Craig

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et al teach a stiffening rib 40 on the housing, positioned within an outer wall structure, which serve to cool the housing 36 and thus reduce stress. Vogt teaches stiffening a stiffening rib 77 on the housing, positioned within an outer wall structure, which serves to cool the housing 60 and reduce the stress. Erickson teaches various aspects of the prior art but does not specifically teach the housing is sheet metal having a wall thickness of between 3 and 10 mm. However, using sheet metal with this thickness is well known in the combustor art and it would have been obvious to employ as an obvious matter of using the conventional materials in the art and having the conventional ranges in the art.

5. Claims 25-30, 34, 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eriksson et al (4,362,500), by itself or in the combination applied above, in view of either Maclin (4,912,922) or Halila (5,363,643). Eriksson et al teach various aspects of the claimed invention, including the cooler air inlet orifice arranged on the outer wall structure such that where the cooling air enters the cooling air channel, a section of the housing is cooled by impingement cooling, but do not teach the interlocking joint on the outer wall structure. Maclin is cited to show to show that it is old and well known in the art to employ an interlocking wall (see bolts) at the outlet end of the combustor with the outer wall. Halila is also cited to show that it is old and well known in the art to use an interlocking joint on the outer wall structure (see the downstream end of 44 which interlocks with 46. It would have been obvious to one of ordinary skill in the art to employ an interlocking joint on the outer wall structure, in order to provide adequate structural support for the combustor housing.

6. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over any of the above applied art, and further in view of Tomolonius (3,031,844). The prior art do not teach the housing is split in a maximum of one sectional plane. Tomolonius teaches that it is old and well known to split the housing 5 in a maximum of one sectional plane, the housing is surrounded by an outer wall 6, i.e. split in half, in order to facilitate assembly/disassembly, and/or inspection of the combustion chamber (col. 1, lines 9+). It would have been obvious to one of ordinary skill in the art to split the housing 5 in a maximum of one sectional plane, in order to facilitate assembly/disassembly, and/or inspection of the combustion chamber

7. Claims 31-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over the above prior art in view of any of WO 99/47874, DE 19751299 and Walz et al (6,085,515 or DE 19623300) and optionally Moore (5,326,206). The above applied prior teach various aspects of the claimed invention but do not teach the detailed structure of the suspension device. WO '874 teaches a the housing is suspended on the wall structure by a suspension device; the suspension device is formed by a plurality of fixing elements that are arranged around the perimeter of the housing and connected to the wall structure under tension; the fixing elements are spring mounted 15 at the end adjoining the wall structure; wherein the suspension device is designed such that the suspended housing can move both axially and radially with respect to an axis running in a lengthwise direction of the combustion chamber. DE '299 teaches the housing is suspended on the wall structure by a suspension device; the suspension device is formed by a plurality of fixing elements

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16 that are arranged around the perimeter of the housing and connected to the wall structure under tension; the fixing elements are spring mounted 42 at the end adjoining the wall structure 7; wherein the suspension device is designed such that the suspended housing can move both axially and radially with respect to an axis running in a lengthwise direction of the combustion chamber. Walz et al teach the housing is suspended on the wall structure by a suspension device; the suspension device is formed by a plurality of fixing elements that are arranged around the perimeter of the housing and connected to the wall structure under tension; the fixing elements are spring mounted 13 at the end adjoining the wall structure; wherein the suspension device is designed such that the suspended housing can move both axially and radially with respect to an axis running in a lengthwise direction of the combustion chamber; wherein the fixing elements comprise bolts 4, each of which have at a first end an essentially hemispherical bolt head 6 that is seated so as to allow tilting in a recess in a bolt holder mounted on the housing end, said recess being essentially hemispherical in cross-sectional view (near 5); the second end of each bolt is fed through a guide hole in the wall structure and through a compression spring 13 on the outer side of the wall structure, the compression spring being compressed against the outer side of the wall structure by means of a washer 14 held at the second end of the bolt. Walz et al appear to teach hemispherical bolt head the other applied references do not teach a hemispherical bolt head and matching hemispherical surface. Moore teaches that a hemispherical bolt head 29 facilitates a self adjusting load surface (col. 5, lines 19+). It would have been obvious to one of ordinary

skill in the art to employ a hemispherical bolt head and matching hemispherical surface, in order to employ a self adjusting load surface.

Response to Arguments

8. Applicant's arguments with respect to the claims have been considered but are with respect to the new limitations introduced by amendment on 10/12/2005. These limitations have been given full treatment above.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ted Kim whose telephone number is 571-272-4829. The

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Examiner can be reached on regular business hours before 5:00 pm, Monday to Thursday and every other Friday.

The fax numbers for the organization where this application is assigned are

571-273-8300 for Regular faxes and 571-273-8300 for After Final faxes.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Thorpe, can be reached at 571-272-4444.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist of Technology Center 3700, whose telephone number is 703-308-0861. General inquiries can also be directed to the Patents Assistance Center whose telephone number is 800-786-9199. Furthermore, a variety of online resources are available at <http://www.uspto.gov/main/patents.htm>



Ted Kim

Primary Examiner

November 17, 2005

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